9-9099.

GULF CANADA LIMITED

2480 NORTH SHERIDAN WAY, SHERIDAN PARK, ONTARIO L5K 1A8 • (416) 822-6770

RESEARCH AND DEVELOPMENT DEPARTMENT

MAR 2 - 1980

CANMET Administration

ADMINISTRATION

MAR 20 1980

CUSTOMER'S ORDER NO. RN 23440-9-9099
FC 309-132-00000-334500-0433

SOLD TO
Energy, Mines & Resources,
CANMET, Accounts Section,
Room 242, 555 Booth Street
Ottawa, Ontario
K1A 0G1

SHIPPED TO

INVOICE DATE March 13, 1980
INVOICE NO. 78-80-45-1

TERMS Due on Receipt of Invoice

	QUANTITY	DESCRIPTION	PRICE	AMOUNT
		Gulf Canada fee re distillation of Athabasca bitumen as described in your contract dated February 25, 1980. File No.: 22SQ, 23440-9-9099.		
→		Results reported in Mr. G. C. Pickard's letter to Mr. J. F. Kelly dated March 14, 1980. attached.		$6500.00

CONTRACT SERIAL NO: OSQ79-00173
REQUISITION NO: 23440-9-9099
CONTRACTOR: Gulf Canada Limited

8pp

MICROMEDIA

Gulf

GULF CANADA LIMITED

2489 NORTH SHERIDAN WAY, SHERIDAN PARK, ONTARIO L5K 1A8 • (416) 822-6770 • TELEX NO. 06982256

RESEARCH AND DEVELOPMENT DEPARTMENT

March 14, 1980
Our Ref. #78-80-45

Mr. J.F. Kelly,
Coal Liquifaction Group,
ENERGY RESEARCH LABORATORIES,
555 Booth St.,
Ottawa, Ont. K1A 0G1

Dear Mr. Kelly:

RE: DISTILLATION OF ATHABASCA BITUMEN

We have completed the distillation of the three drums of bitumen you provided, and the fractions have been shipped to your attention. The equivalent boiling-range distillates from each fractionation were combined; however, as we were unable to melt the residual products, they have been left in separate cans. The products have been coded as follows:

Light Gas Oil	- LBF-5
Heavy Gas Oil I	- LBF-6
Heavy Gas Oil II	- LBF-7
Residuum	- LBP-2

Attached you will find tables presenting material balance data and ASTM distillations of the distillate fractions for each of your three drums of bitumen. In the material balance, "total pitch" includes material recovered on cleaning the still, "recovered pitch" includes only the product recovered as such and shipped. About 90 percent of the total residuum was recovered as product.

If you have any questions on this work, please let me know.

G.C. Pickard, Coordinator,
Process Development.

By: Craig Henderson

CH:vs
Attach.

GULF CANADA LIMITED

RESEARCH & DEVELOPMENT DEPARTMENT

MATERIAL BALANCE SHEET

Crude: Canmet Athabasca Bitumen LB1-2 Sample No.: D79-47

Project No.: 78-80 Charge: 158.40 kg Specific Gravity: 1.0086

CUT		LGO	HGO I	HGO II	PITCH (Total)	PITCH (Rec'd.)
From	°C	IBP	335	415	525+	
To	°C	335	415	525		
Weight	kg.	21.302	24.323	24.902	87.873	79.6
Weight	%	13.4	15.4	15.7	55.5	
S.G.	60/60	[0.8864]	(0.9513]	[0.9848]	[1.0692]	
Vol.	L	24.032	25.569	25.287	[82.188]	
Vol.	%	15.3	16.3	16.1	52.3	

[Calculated]

CH:vs

March 14/80

GULF CANADA LIMITED

RESEARCH & DEVELOPMENT DEPARTMENT

Crude: Canmet Athabasca Bitumen LB1-2 Sample No.: D79-47

Project No.: 78-80 Specific Gravity 60/60: 1.0086

ASTM METHOD	D-86	D-1160	D-1160	
CUT	L.G.O.	HGO I	HGO II	PITCH
FROM °C	IBP	335	415	525+
TO °C	335	415	525	
Vol. % Yield	15.3	16.3	16.1	52.3
ASTM Dist.				
IBP	120	292	295	
5%		344	409	
10	212	350	433	
15		356	442	
20	246	358	444	
25		361	446	
30	262	363	449	
35		366	452	
40	274	368	456	
45		372	459	
50	282	376	464	
55		379	468	
60	290	383	473	
65		387	478	
70	296	391	483	
75		397	488	
80	302	401	495	
85		407	502	
90	312	414	513	
95		424	526	
FBP	326	436	548	
% Recov.	98	98	98	

CH:vs

GULF CANADA LIMITED

RESEARCH & DEVELOPMENT DEPARTMENT

MATERIAL BALANCE SHEET

Crude: Canmet Athabasca Bitumen LB1-3 Sample No.: D79-48

Project No.: 78-80 Charge: 147.30 kg Specific Gravity: 1.0057

CUT		LGO	HGO I	HGO II	PITCH (Total)	PITCH (Rec'd.)
From	°C	IBP	335	415	525+	
To	°C	335	415	525		
Weight	kg.	19.884	23.367	23.923	80.126	74.3
Weight	%	13.5	15.9	16.2	54.4	
S.G. 60/60		[0.8822]	[0.9514]	[0.9806]	[1.0688]	
Vol.	L	22.538	24.561	24.396	[74.969]	
Vol.	%	15.4	16.7	16.7	51.2	

[Calculated]

CH:vs

March 14/80

GULF CANADA LIMITED

RESEARCH & DEVELOPMENT DEPARTMENT

Crude: Canmet Athabasca Bitumen LB1-3 Sample No.: D79-48

Project No.: 78-80 Specific Gravity 60/60: 1.0057

ASTM METHOD	D-86	D-1160	D-1160	
CUT	L.G.O.	HGO I	HGO II	PITCH
FROM °C	IBP	335	415	525+
TO °C	315	415	525	
Vol. % Yield	15.4	16.7	16.7	51.2
ASTM Dist.				
IBP	160	296	222	
5%		349	422	
10	210	355	433	
15		357	437	
20	236	359	442	
25		361	446	
30	256	364	449	
35		367	453	
40	270	370	458	
45		372	462	
50	278	376	466	
55		379	471	
60	286	384	474	
65		388	478	
70	294	393	482	
75		398	487	
80	296	403	493	
85		408	501	
90	310	413	511	
95		422	533	
FBP	320	436	549	
% Recov.	98	98	98	

CE:vs

GULF CANADA LIMITED

RESEARCH & DEVELOPMENT DEPARTMENT

MATERIAL BALANCE SHEET

Crude: Canmet Athabasca Bitumen LB1-4 Sample No.: D79-49

Project No.: 78-80 Charge: 178.275kg Specific Gravity: 1.0129

CUT		LGO	HGO I	HGO II	PITCH (Total)	PITCH (Rec'd.)
From	°C	IBP	335	415	525+	
To	°C	335	415	525		
Weight	kg.	18.662	25.834	29.341	104.438	94.4
Weight	%	10.5	14.5	16.4	58.6	
S.G.	60/60	[0.8888]	[0.9492]	[0.9772]	1.0682	
Vol.	L	20.994	27.216	30.010	[97.773]	
Vol.	%	11.9	15.5	17.0	55.6	

[Calculated]

CH:vs

March 14/80

GULF CANADA LIMITED

RESEARCH & DEVELOPMENT DEPARTMENT

Crude: Canmet Athabasca Bitumen LB1-4 Sample No.: D79-49

Project No.: 78-80 Specific Gravity 60/60: 1.0129

ASTM METHOD	D-86	D-1160	D-1160	
CUT	L.G.O.	HGO I	HGO II	PITCH
FROM °C	IBP	335	415	525+
TO °C	335	415	525	
Vol. % Yield	11.9	15.5	17.0	55.6
ASTM Dist.				
IBP	166	292	312	
5%		335	421	
10	217	347	432	
15		352	437	
20	244	356	439	
25		358	442	
30	264	362	444	
35		366	447	
40	276	371	451	
45		374	455	
50	286	378	458	
55		381	462	
60	294	384	466	
65		388	471	
70	302	392	475	
75		397	479	
80	312	402	483	
85		409	488	
90	322	415	499	
95		422	512	
FBP	336	439	542	
% Recov.	98	98	98	

CH:vs